Original Article

Pre-operative Screening of Patients for Hepatitis B and C virus

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Purpose: To screen hepatitis B and C among patients and to establish policies to avoid hepatitis spread in an almost fully preventable setting.

Material and Methods: This was a Prospective observational study. A total of 543 patients admitted in eye ward were screened for hepatitis B and C, by Immunochromatographic (ICT) method. The study was conducted from August 2010 to October 2011.

Results: Out of the total of 543 patients admitted in eye ward 255 of them were male and 288 were female. A total of 145 (27%) patients were found to be hepatitis C (HCV) positive and 11 (2.02%) were hepatitis B virus (Hbs) positive.

Conclusion: Such a high percentage of hepatitis C positive patients is alarming not only for patients but for health workers dealing with such patients. Proper sterilization protocols should be implemented, and followed that would help in prevention of spread of the disease.

Viral hepatitis (HBV & HCV) is one of the single most important cause of chronic liver disease in Pakistan and World Wide[1-2]. It is estimated that it HCV causes infection in about 170 to 200 million people worldwide[3,4]. The hepatitis B virus (HBV) was first isolated in 1963[5]. It has infected over two billion individuals worldwide. More than 520,000 die each year from HBV related acute and chronic liver disease[6]. The hepatitis B surface antigen (HBs Ag), a serological marker for HBV was first demonstrated by Blumberg in 1963[7].

Screening for hepatitis B and C is not routinely carried out in majority of hospitals in Pakistan. Precautions against Hepatitis B and C are taken only when a known positive case is being treated or operated. Surgeons, anesthetics, theater staff, nurses and other health care workers have significantly increased risks of infectivity along with further transmission of the disease, if preoperative screening and standard precautions are not followed strictly, this makes the preoperative screening for hepatitis B & C one of the most important investigations, so that standard precautions are taken to avoid further hazards of disease.

MATERIAL AND METHODS

The aim of this study was to screen for hepatitis B and C among patients admitted in department of Ophthalmology, Sir Ganga Ram Hospital, Lahore. This was a prospective observational study. 543 patients admitted in eye ward were randomly screened for hepatitis B and C, by ICT method. The study was conducted from August 2010 to October 2011. Hepatitis Bs Ag and HCV screening were carried out in all patients to see the carrier status of the patients before surgery. All findings were recorded and analyzed at the end of the study.

RESULTS

Out of the total of 543 patients admitted in eye ward 255 of them were male and 288 were female. A total of 145 (27%) patients were found to be HCV positive and 11 (2.02%) were Hbs Positive. Out of them, 255 were males and 288 females. The frequency of HBV was 2.8% (7/255) in males and 1.4% (4/288) in females.

The frequency of HCV was 26% (67/255) in males and 27% (78/288) in females, as shown in (Table 1).

The frequency of hepatitis B and C (combined) was more in age group ranging between 40 – 70 years, in both sexes as shown in (Table 2).

Table 1:

	Total	HCV +VE n(%)	HBS +VE n(%)	Infected n(%)
Male	255	67 (26)	7 (2.8)	29.01
Female	288	78 (27)	4 (1.4)	26.47

Table 2:

Age	No. of Patients	HCV +ve	HBS +ve
<20	15	0	0
1-30	38	8	1
31-40	57	9	1
41-50	95	28	3
51-60	142	36	4
61-70	127	38	1
>70	69	26	1
Total	543	145	11

DISCUSSION

In our study the incidence of HCV infection amongst patients admitted was 27% as compared to Hepatitis B (2.02%). Hepatitis C is more common than hepatitis B among surgical patients. There is no significant difference between male and female infection. Both hepatitis B and C are highly prevalent in the age group between 40-70 years, while prevalence of HBV and HCV infections is least in the age group <30 years.

There are a number of factors contributing to transmission of hepatitis B & C but contaminated needles and unscreened blood products are the major factors[8]. Contaminated needles and surgical instruments can transmit infection even after a month of being soiled by virus[9]. An average risk of HCV transmission after needle stick injury is estimated to be about 1.8%[10]. In a study from USA parenteral drug use was reported to be the major risk factor in majority of HCV positive cases[11]. Hepatitis B & C virus infection is transmitted mainly by blood products. Surgeons, anesthetics, theater staff, nurses and other health care workers are at greater risk of acquiring this infection[12]. Screening for hepatitis B & C is not routinely performed in most of government and public sector hospitals because of number of factors. Lack of awareness, poor health education, poor test facilities and high cost of the tests are some of the major contributing factors. Due to tremendous increase in surgical workload, operation theaters can be one of source of transmission of hepatitis B & C. This can be easily avoided by making the operation theater staff alert, by preoperative screening of hepatitis B& C, so that proper standard precautions can be taken[13].

The isolation of hepatitis B virus[14] and C virus[15] from tear fluid and aqueous humor raises the possibility of transfer of hepatitis C virus during the course of an ophthalmologic examination, that is, Goldmann tonometry and trial contact lens fitting. Certain studies have discovered that the concentration of hepatitis C virus in human tear fluid is independent of the severity of hepatitis infection. Other studies have reported that hepatitis C virus RNA is found in higher concentrations in tear fluid compared with plasma[16]. Blood or other body fluids from patients who are HCV positive splashing into the face and eyes is a risk for spread of hepatitis C virus[17].

CONCLUSION

Hepatitis C should be a concern to public health authorities, and primary, secondary and tertiary prevention activities should be implemented and monitored, with precise targets set to be reached. It is a significant occupational hazard to all health care professionals especially surgeons, anesthetics and operation room assistant.

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